

*Where Safety Is
Accelerating*

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HOT STUFF

In Lusby, Maryland, Darlene Bowman found a black snake outside her bathroom and called a neighbor for help. The neighbor poured gasoline on the nonpoisonous snake, but the vapors were ignited by the pilot light of a furnace about 10 feet away.

According to fire officials, the fire killed the snake but caused \$50,000 damage.

APT Project at LANL
Los Alamos, NM

Oct-Nov Safety Newsletter Safety Newsletter

Safety Topic:

Fire Protection

Fire kills thousands of Americans each year, injures hundreds of thousands, destroys billions of dollars in property, and costs tens of billions of dollars overall, but mayors and city managers, school officials, the media, and the general public still are largely unaware of the magnitude of these numbers. Their lack of awareness and failure to realize the seriousness of fire to communities and the country are factors in keeping the **U.S. fire problem one of the worst in the world per capita.**



It's That Time!!!

Most fire safety organizations recommend that you change the batteries in your smoke detector each Spring and Fall when you change your clocks for Daylight Savings!

See Fire Safety, page 2

Lessons Learned:

"Decay Heat Overheat" or "Did We Let Down Our Guard?"

What Happened?

On August 26, 1999, the plastic insulation was "fried" on some electrical connections to the APT Decay Heat Insert, located in the A6 Target Area. The photos below show the before and after conditions.

BEFORE (In Shop)



~ 6 "

AFTER (@A6)



The A6 Target Area was evacuated after an unexpected odor was smelled. Air samples revealed that no combustion products or radiological hazards were present. This incident was ultimately reported to DOE as an "Off-Normal Occurrence" because approximately \$5000 dollars worth of damage was done to Laboratory equipment. This value does not include the cost for personnel involved in preparing the experiment.

What Went Wrong?

Have you ever heard the adage "When everything is going well, you better put up your guard"? In this case, APT was reaping exciting data from the very successful CY98 (1QFY99) LANSCE H+ irradiation cycle. The team that prepared the Basis for Interim Operation (BIO) for that irradiation cycle was nominated for a Laboratory Safety Award. Two key personnel had just been informed that they were being recognized with Laboratory Distinguished Performance Awards for their contributions to the APT program. Removal of the other APT experimental inserts from the A6 Target Area was going well. Then, "wham!" the overheating of Decay Heat wiring occurred. The fact is, it is easy to become complacent when things are going well. That is basically what happened here. The level of rigor that was applied during the preparation for and execution of the CY98 LANSCE H+ irradiation simply was not applied to this "add-on" or "after-the-fact" experiment.

See Lessons Learned, page 2

Fire Safety

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The Overall Fire Picture

- The U.S. has one of the highest fire death rates in the industrialized world. For 1997, the U.S. fire death rate was 15.2 deaths per million population.
- Between 1993 and 1997, an average of 4,500 Americans lost their lives, and another 26,500 were injured annually as the result of fire.
- About 100 firefighters are killed each year in duty-related incidents.
- Each year, fire kills more Americans than all natural disasters combined.
- Fire is the third-leading cause of accidental death in the home; at least 80 percent of all fire deaths occur in residences.
- About 2 million fires are reported each year. Many others go unreported, causing additional injuries and property loss.
- Direct property loss due to fires is estimated at \$8.5 billion annually.



What Can You Do?

- ◆ Install and maintain Smoke Detectors in your home!
- ◆ Have fire extinguishers available in your home!
- ◆ Develop and practice a home evacuation plan.
- ◆ Maintain the landscaping around your home to minimize the threat from wildfires.

For More detailed information see the APT Safety Web Page

<http://apt.lanl.gov/safety/safety.html>

Lessons Learned

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The Decay Heat overheat boiled down to a conduct-of-operations problem. Here's what went wrong:

- 1) *An Engineering Design Review was never conducted.* The heater panels, running at 100% power, were way over-matched for the objectives of the experiment. Although controllers were installed to throttle the input power, an engineering review might have revealed that set points on the controllers were necessary to restrict the operator from inadvertently turning on the heaters at full power.
- 2) *Established Quality Assurance procedures were not followed.* Thermocouples were incorporated into a safety interlock system that would shut down the heaters if the temperatures exceeded a certain value. However, the thermocouples placed inside the steel insert were connected to the wrong data acquisition panel. This was not caught because a second individual did not check the connections. Also, the thermocouple panels were not properly labeled, nor was there a visible documented record of the data acquisition inputs and outputs.
- 3) *An Operational Readiness Review was not conducted.* Instead, the heater system was turned on at full power, without turning on the data acquisition system to monitor the insert temperatures. More importantly, these actions were taken without the concurrence of the principal investigator for the experiment. One might comment: "No beam was being delivered to the module. What could possibly go wrong?" The answer to this question is: "Perhaps little from a safety standpoint, but programmatic consequences were considerable."
- 4) *The Hazard Control Plan (HCP) was not in place prior to starting the experiment.* A draft document had been created and was under review. In fact, it addressed a generic overheating problem. However, this HCP was an APT-TPO document and there was some confusion as to how it applied to LANSCE activities.
- 5) *A Memorandum of Understanding (MOU) was not in place between APT-TPO and LANSCE-7.* The use of an MOU is a relatively new development, resulting from the recent LANSCE Safety Stand-Down. If the parties involved were exposed to MOU guidelines and usage, this would have addressed the interaction and responsibilities of the two organizations, including the use of the APT HCP and expectations during the system start-up.

Had everyone involved displayed their normal level of vigilance, the design review, the QA, the readiness review, the HCP, and the MOU would not have been overlooked. The bottom line is we must guard against complacency.

Upcoming Events

11/11 Veterans Day

11/25 Thanksgiving

Do you have events that we could help advertise in the Newsletter?

Send us a note at:

apsafety@lanl.gov

See Lessons Learned, page 3

Around The Project...

- LEDA Achieves 100-mA Beam Milestone!
- SRS Operations Personnel achieve LANSCE Operator Certification: Tommy Miller and Rob Muncy
- Project Safety Awards were issued to: LEDA Team, BIO Preparation Team, and SCRF Team (Plaques and “APT Safety” Coffee Cups Were Given Out)

If you were a member of one of these teams and did not get your cup please contact Tony Tomei or Melissa Metcalf. In addition, there are still several Safety Coffee Cups left for others on the project that would like to buy one. Please see one of the group secretaries!

- LANL Distinguished Performance Awards: CRITS RFQ Team, Mike Paciotti, and Danny Olivas

• Recent Retirees:

Malcom Smith, 22 yrs, Jim Noble, 33 yrs

• Service Awards:

George Lawrence, 35 yrs (LANL), Steve Sheetz, 15 yrs (WSRC), Stuart Maloy, 10 yrs (LANL), Loren Toole, 10 yrs (WSRC)

In addition to receiving his 10 yr. service award, Loren Toole has taken a permanent position at LANL. Loren will start work with the TSA-4 group on 11/1 -- The APT team thanks Loren for his contribution to the project over the last several years and wishes him the best of luck in his new assignment!

Please keep us up-to-date on what is going on with the people on our team. We would love to share good news about births, new assignments, and awards! Also if people have moved or changed numbers, we can help get the word out! Please send any items for the newsletter to: aptsafety@lanl.gov.

Lessons Learned

From page 2

What Was Done Right?

Not all was for naught! Some things were done right!

- The containment box lid was in place, limiting the prospects for the emission of radioactivity-laden combustion products into Area A East. This may be the single most important step that prevented this incident from escalating to an “Unusual Occurrence” with concomitant safety problems.
- The operation of the heater modules was checked before transferring the package to the A6 Target Area.
- The safety shutdown sequence for the heaters was the right idea, and two out of three thermocouple sets did function properly, preventing further damage to the insert by alerting personnel that a high-temperature environment existed.
- Communication and planning was occurring between APT and LANSCE personnel – *the problem was that formal conduct of operations was not followed.*
- LIR 201.00.04.0, entitled “Incident Reporting”, was properly adhered to. This LIR states that in the case of non-emergencies, incidents should be reported to the responsible Facility Manager. That was done, and the FM then initiated the proper and timely response.

What's Next?

From a programmatic standpoint, APT will have to live with the accuracy of the original Decay Heat results. From a conduct-of-operations perspective, we must resume the rigor that earned the respect and praise of the APT External Review Committee, as we bring the designs, data compilations, and reports to closure. The program to do such is already in place. We simply need to adhere to what we've already established. This must be particularly true for operations involving interactions or interfacing among different organizations, like APT-TPO, APT-PPO, LANSCE-7, and ESA-EPE. The prompt establishment of an MOU between LANSCE-7 and the Area A East user groups will be an important step in the correct direction. In addition, when things are going well, we cannot let down our guard.

Frank D. Gac

A Personal Safety Note

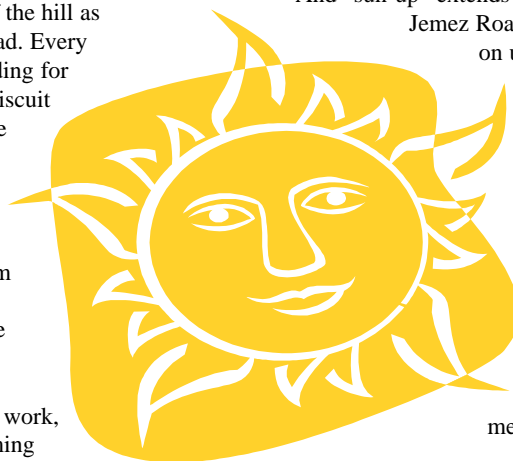
Please, protect yourself from me!

I live in the mobile home park at the top of the hill as you approach LANL from East Jemez Road. Every morning I turn left onto Jemez Road, heading for MacDonalds and my bacon-egg-and-cheese biscuit and two cartons of milk. Then I come back the other way, heading east down Jemez Road to TA-53.

Having driven a car for 35 years, I put it on autopilot. Okay, what I mean, obviously, is I'm not thinking about my driving. There are two things on my mind: the Atlanta Braves and the New York Yankees.

If you travel east on Jemez Road as you go to work, you already realize you cannot see any oncoming traffic at sun-up unless the cars have their headlights on. Nada. Zip.

And “sun-up” extends at least until 9:00 AM! But if you travel west on Jemez Road as you approach the turnoff to TA-53 or travel on up the mountain, the sun is behind you and you tell yourself you don't need your headlights because you can see perfectly well.



Obviously you are trusting in a higher power to keep you safe. But don't depend on me. I can't see you. So when I pull out in front of you because your headlights are not turned on, just remember not to spoil my breakfast by hitting me with your vehicle. Or if I make a left turn in front of you at the entrance to TA-53, please don't make me late by causing an accident. In other words, protect yourself from me by driving to work with your headlights on.

Berylene Rogers

Measuring Our Safety Performance!

It is helpful to be reminded of and encouraged or challenged by how we are doing relative to our safety performance. As you can see by the information provided below, we can take pride in our recent performance. However, this does not mean that we should in any way let down our guard! On the contrary, our goal is for continuous improvement. New hazards confront us daily, and if we are to remain injury free we MUST constantly look for ways to work and play more safely!

Management Walkarounds:


The Management Walk-Around database currently indicates that our organization has a 122% compliance rate for the quarter ending Sept, 1999. Management walk-arounds play a key role in maintaining safe work areas and workers.

Standdown Action Items:

We continue to make progress on the closeout of our safety standdown action items. All "A" priority items have been completed. Only 2 of 23 "B" items, and 4 of 23 "C" items remain open.

Injury/Illness Prevention:

All significant work related injuries and illnesses whether they require only medical treatment or involve restrictions on work activities or time away from work are tracked. The APT organization has had only one work related illness in the past 12 months. We have now gone 7 months with no work related injuries or illnesses. Our TRI and LWC rates of 3.73 (events per 200,000 man-hours worked) is the result of one event during the last 12 months in a relatively small workforce. These, however, are above the Lab's overall TRI rate of 2.3 and a LWC rate of 1.45.

Injury/Illness Prevention						
Our present safety performance earns the "Green Light"!		TRI	MTC	LWC-R	LWC-L	TRI = Total Recordable Cases
	MTD	0	0	0	0	MTC = Medical Treatment Cases
	YTD	1	0	1	0	LWC-R = Lost Workday Cases - Restricted
	RATE	3.73	0	3.73	0	LWC-L = Lost Workday Cases - Lost Time
GOALS		0	0	0	0	Rates = Events per 200,000 man-hours worked

Tell It To Jim!

Want a way to express a safety concern or suggest a safety improvement but don't know quite how to go about it? Or maybe you have already spoken up but are not sure what has been done. Well, the following form can be used to get your concern or suggestion heard. Just fill in the information, cut out the form and mail it to Patty Montoya,

APT TPO lead secretary, at MS H816. We will be tracking items and actions monthly in the newsletter. It is APT's goal to effectively raise and respond to safety items within our organization; but remember, the Lab also has an effective Safety Concern Program available to all employees through the LANL Home Page.

SAFETY ITEM

Description (Please be as detailed as possible):

Facility: _____ Room/Area: _____ Date: _____

Suggestion for improvement:

Name (Optional): _____ Phone/e-mail (Optional): _____